

## ABSTRACT OF THE DISCLOSURE

A circuit controls an oscillation amplitude of a crystal oscillator including a crystal resonator, a current source supplying a bias current, and an output transistor coupled to the crystal resonator and the current source. The circuit includes a peak detector for detecting a peak voltage of an output signal of the crystal oscillator, and a controller coupled to the peak detector and to the current source for controlling the current source in accordance with a difference between the peak voltage and a target voltage, the target voltage being set to be substantially equal to  $2V_{th}$ , where  $V_{th}$  is a threshold voltage of the output transistor. A frequency control circuit controls a first switched-capacitor array and a second switched-capacitor array coupled to the crystal resonator, and alternately switches a unit capacitor in the first switched-capacitor array and a unit capacitor in the second switched-capacitor array based on a frequency control signal.